March 8, 2017

CHS Inc.
P.O. Box 894
395 164th St.
South Sioux City, NE 68776

Re: Notice of Violation(s), Sioux City Wastewater Discharge Permit No. 2015-19-I.

The Significant Non-Compliance (SNC) contained herein is issued for discharge pH and reporting violations October 1, 2016-December 31, 2016.

On March 2, 2017 CHS supplied the hourly flow weighted average pH discharge readings for the months of October, November and December 2016. The data had been compiled and put into a power point for each month identifying the non-compliant events following historical data review by CHS. On February 9, 2016, CHS was issued a Notice of Violation and was required to submit "all" discharge pH data. The actual historical data trends were not received by the reporting deadline as requested.

The following tables summarize the reported non-compliant events. The data submitted for October 2016 was discharged to Big Ox Energy for preliminary treatment, prior to discharge to the WWTP and has been reviewed as such:

October 2016			
Total Minutes in violation of pH limit	Total discharge flow volume	# of hourly weighted average pH readings in violation	# of ***Hazardous*** weighted hourly average pH
1347	0.504 MG	15	0

The data submitted for November and December 2016 was discharged to the City of South Sioux City for conveyance to the WWTP for treatment, and has been reviewed as such:

November			
Total Minutes in violation of pH limit	Total discharge flow volume	# of hourly weighted average pH readings in violation	# of ***Hazardous*** weighted hourly average pH
249	0.092 MG	1	1
December			
Total Minutes in violation of pH limit	Total discharge flow volume	# of hourly weighted average pH readings in violation	# of ***Hazardous*** weighted hourly average pH
3136	0.994 MG	63	5

The three (3) month data review indicates that there were 79 weighted hourly average pH calculations that were significantly above or below permit limit. Based on the reporting frequency established by CHS, these calculated instances of non-compliance should have been identified as an area of concern and immediately addressed as such. Five (5) of these non-compliant instances were considered ***HAZARDOUS*** discharges and are prohibited.

Overall, 1.588 million gallons of wastewater was discharged, in violation of discharge pH limit, for the months of October, November and December 2016. There were 51 days where a discharge violation occurred, but was not reported, and 41 instances where the weighted hourly average pH does not demonstrate a non-compliant event, but is reported as such by CHS. Additionally, there are six (6) instances of discharge pH above or below ***HAZARDOUS*** limit.

This data review is concerning based on the number instances of non-compliance, the volume discharged during the non-compliant events, and the potential for impact on Big Ox Energy and/or the WWTP. There were a number of conversations that occurred with CHS, City of South Sioux, and the City of Sioux City from August 2016-February 2017 about continued concerns related to discharge pH compliance at CHS. It wasn't until a notice of Significant Non-Compliance was issued February 9, 2017, that the historical data was evaluated, by CHS, for pH discharge compliance verification. The submitted data has been reviewed for any WWTP process inhibitions/pass through that may have been associated with the non-compliant discharge events compiled by CHS. The following is a summary of these events:

- 11/9/2016-11/10/2016
    - The WWTP experienced a significant loading, this resulted in a loss of microbial life forms on the secondary treatment process
- 12/5/2016
    - The WWTP experience an abnormal jump in effluent TSS concentration related to a process inhibition on the secondary process
- 12/7/2016-12/10/2016
    - The WWTP experienced a significant loading that resulted in process inhibition on the secondary process which affected the sludge volume
- 12/20/2016
    - The WWTP experiences a significant loading that resulted in process inhibition on the secondary processes related to alkalinity

A meeting was held with CHS and I&S Group on March 2, 2016 to discuss the data that had been submitted and to review the plan of corrective action that had been put together by CHS. At the time of our meeting it was explained that the programing of the discharge pH control system had been updated to address the level at which the high and low pH adjustment was being controlled, the method by which the system is sending out alarms if a process issue is identified, review of equipment critical to pH control for redundancy and a number of other items related to controlling the discharge pH within permit limit.

As discussed at our meeting, CHS has added an internal evaluation of discharge pH as an additional control parameter. CHS is working with I&S Group on process review and discharge evaluation for recommendations pertaining to current and future sustainability of the discharge pH control system. I&S Group will put together an action plan which will be

submitted to the City by CHS once it is complete. In the meantime additional control parameters are being evaluated and if feasible will be implemented as soon as possible.

I look forward to our meeting March 15, 2017. If you have questions or comments, please call me at 712-279-6987.

Respectfully,

Desiree McCaslen, City of Sioux City
Pretreatment Manager

cc: IDNR Field Office 3
City of South Sioux
EPA Region 7